

What is claimed is:

1. A composition comprising a fragment of a glucan binding protein-B (GbpB) and a biocompatible microparticle, wherein said fragment binds to a major histocompatibility complex (MHC) class II protein.
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2. The composition of claim 1, wherein said fragment binds to an HLA protein.
3. The composition of claim 1, wherein said GbpB protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO's: 29, 30, 31, 32, and 33.
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4. The composition of claim 1, wherein said fragment comprises an amino acid sequence selected from the group consisting of SEQ ID NO's: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 41.
- 15 5. A composition comprising a GbpB polypeptide and a glucosyltransferase polypeptide and biocompatible microparticles.
6. The composition of claim 5, wherein said GbpB polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO's: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
20 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 41.
7. The composition of claim 5, wherein said glucosyltransferase polypeptide comprises a catalytic domain of SEQ ID NO: 34, 35, 36, 37, 38, 39, or 40.
- 25 8. The composition of claim 7, wherein said domain comprises an amino acid sequence of SEQ ID NO: 24 or 25.
9. The composition of claim 5, wherein said glucosyltransferase polypeptide comprises a glucan binding domain of SEQ ID NO: 34, 35, 36, 37, 38, 39, or 40.
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10. The composition of claim 9, wherein said domain comprises an amino acid sequence of SEQ ID NO: 23.

11. The composition of claim 5, wherein said glucosyltransferase polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 23, 24, 25, 26, 27, 28, 42, 43, 44, and 45.
- 5 12. The composition of claim 5, wherein said GbpB polypeptide comprises SEQ ID NO: 1 and said glucosyltransferase polypeptide comprises SEQ ID NO: 23.
13. The composition of claim 5, wherein said GbpB polypeptide comprises SEQ ID NO: 1 and said glucosyltransferase polypeptide comprises SEQ ID NO: 25.
- 10 14. The composition of claim 5, wherein said composition further comprises a peptidyl core matrix.
- 15 15. A method of eliciting production of an antibody in a mammal, comprising administering to said mammal a composition comprising a fragment of a glucan binding protein-B (GbpB) and biocompatible microparticles, wherein said fragment binds to a major histocompatibility complex (MHC) class II protein.
- 20 16. A method of eliciting production of an antibody in a mammal, comprising administering to said mammal a composition comprising a GbpB polypeptide and a glucosyltransferase polypeptide and biocompatible microparticles.
- 25 17. The method of claim 16, wherein an amount of an anti-GbpB antibody or an anti-GTF antibody produced by said mammal is at least 10% greater than an amount produced by a mammal immunized with a composition comprising a GbpB peptide or GTF peptide in the absence of biocompatible microparticles.
18. The method of claims 15 or 16, wherein said antibody comprises an IgA isotype.
- 30 19. The method of claims 15 or 16, wherein said antibody comprises an IgG isotype.
20. A substantially pure antibody produced by the method of claim 15 or 16.

21. The method of claim 15 or 16, wherein said administering comprises intranasally.
22. The method of claim 15 or 16 wherein said biocompatible microparticles are poly(lactide-co-glycolide) adjuvant (PLGA).

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